

# Pythonâ€™s Paradise: Invasive Species in Florida

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## SPEAKERS

Paul Evans, Ricky Telg, Phillip Stokes

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Ricky Telg 00:04

This is Science by the Slice, a podcast from the University of Florida's Institute of Food and Agricultural Sciences, Center for Public Issues Education. In this podcast, experts discuss the science of issues affecting our daily lives revealed the motivations behind the decisions people make, and ultimately provide insight to solutions for our lives.



Phillip Stokes 00:30

Welcome to Science by the Slice, I'm Phillip Stokes, education coordinator with the PIE Center. An ounce of prevention is worth a pound of cure. Many of you have probably heard that phrase, but who said it? And what was it in reference to? For that we go back to an article about preventing fires and cities published in 1735 in the Pennsylvania Gazette written by Benjamin Franklin. He wrote, being old and lame have my hands and thereby incapable of assisting my fellow citizens when their houses are on fire, I must beg them to take in good part, the following hints on the subject of fires in the first place as an ounce of prevention is worth a pound of cure. So why am I talking about prevention? Because today's episode is all about the Burmese Python, an invasive species in South Florida. And when thinking about invasive species prevention is a major component of the overall management strategy. One challenge however, when thinking about prevention is that it's easier to measure the presence of a problem, such as with Burmese pythons, than the absence of one, potentially a different non native species that has not yet established in Florida. another roadblock that we as humans have against taking preventative measures is a tendency to overvalue instant gratification, and undervalue anything that will give us long term rewards. This is referred to as present bias, a especially pernicious obstacle we face when it comes to achieving goals and reducing harm. That said, whether considering urban fires as Benjamin Franklin did, or Burmese Pythons, a reptile that has metaphorically spread like a fire throughout the Everglades in South Florida. It's vital to understand the issue and have knowledge to ensure that management decisions are well informed, and resources are allocated appropriately. So for today's episode, I spoke with Paul Evans, science writer and Outreach Coordinator for the University of Florida's Fort Lauderdale Research and Education Center, as well as researcher with the University of Florida's "Croc Docs," a team of biologists, ecological modelers, and outreach specialists on the

forefront of wildlife research in South Florida in the Caribbean, Paul and I discuss how pythons became established in Florida, the impacts they are having on the ecosystem in economy of Florida, as well as some things that everyone should keep in mind when understanding how we can prevent the spread of non native wildlife. Well, Paul Evans, thank you so much for being on the PIE Center's podcast Science by the Slice. It's pleasure to have you here. Talking a little bit about Burmese Pythons today in Florida and all of their impacts. We'll get into all of that. But first off, just tell me a little bit about yourself, who you are your background and where you work.

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Paul Evans 03:37

Yeah, so I'm Paul Evans. I have worked with various types of wildlife through Alaska, Scotland, parts of Florida before moving down to Fort Lauderdale, where I work for the University of Florida's "Croc Docs." So we are an organization that's been studying crocodilians here in America, as well as throughout Central and South America. And we currently are very heavily researching invasive and non native species here in South Florida.

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Phillip Stokes 04:07

Wonderful. Yeah. And you know, one thing about South Florida and you're in like the Fort Lauderdale area, correct? You know, everything that I've heard is South Florida is just like the prime habitat. And like, considering all of the like global shipping and everything for invasive reptiles almost in the world, right.

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Paul Evans 04:31

If we're not the most, I think we are possibly top three in North America and the United States. We are for sure up there. And I think recently, FWC actually just caught people who were smuggling and 40 I think different types of species of invasive and non native reptiles. So ya know, it's still soul problem. Still an active situation the amount of import Taisha then like you mentioned with the environment here, that's truly what has led to such an expansion for so many species, I mean, we have 63 herpetofauna species that are established here, several of them are small, several of them are ones, we've all grown up seeing just different types of anoles, different types of lizards. But the majority of that has to do with the fact that it's a subtropical or as you move into the keys, a new tropical habitat. So these are around the world, the habitats that are going to have the most biodiversity. So it's kind of built for a lot of these large animals to come here and pretty easily just start to take root because they don't have to adjust too quickly to the type of habitat.

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Phillip Stokes 05:57

Right? We're like, I don't know if this is a politically correct statement, but it's like, we're like America's Zoo. You know, like you're in South Florida. It's like, you come here and you see...Yeah, it's like Jurassic Park. There you go. Jurassic Park. Yeah. Yeah. And you mentioned how like, you know, pets, that's one of the reasons, you know, people like those like exotic pets. That's like, what brought the Python here, the Burmese python in the first place, right.

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Paul Evans 06:28

Sometime in the mid mid 90s. Through parts of the early 2000s. There were almost 100,000 confirmed Burmese pythons imported into the states.

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Phillip Stokes 06:38

Okay, wait, say that again? How many?

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Paul Evans 06:40

Almost 100,000 And that's confirmed. And these animals for the most part them and Ball Pythons, one of the reasons they became and reason why Ball Pythons today still are a, a, quote unquote, good pet, is because they are more timid. There are availabilities for breeding and other stuff like that at a possibly easier rate in captivity than a lot of other species. So, you know, obviously, not all 100s of 1000s of those animals got out and all of them were just to Florida. But you can kind of start to see when you have such a large importation over the course of a decade, why you're gonna start to have problems?

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Phillip Stokes 07:23

I had no, I mean, no clue it was that many that were important? I mean, I guess I thought like, it was, it was much a much smaller number. And yeah, I mean, like, I'm thinking about, if you bring in that many, of course, one or two, or dozens are going to get out either intentionally or accidentally. And it's what we talked about before just the prime climate and ecosystem. It's, it just makes sense.

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Paul Evans 07:54

Right? Oh, yeah, completely. I mean, where they, where they live typically, is either parts of Southeast Asia. So Thailand, Vietnam, Laos, and then as you move down some parts of Indonesia is where they also will live, which Indonesia is just, you know, a giant archipelago. So the Florida Keys are just kind of a smaller version of Indonesia and in the sense of island ecology. So it is kind of one of those things where a lot of the lower part of Florida lines up so perfectly with what they're already used to, you know, they need a lot of freshwater what is Florida have a lot of freshwater.

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Phillip Stokes 08:35

And that is why a lot of the Burmese pythons are in the Everglades. Right. It's, it's like the sea of grass. Right. So that would make sense.



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Paul Evans 08:44

Yes. So roughly. I'm trying to remember the year for Hurricane Andrew, but that is when a breeding facility slash some type of zoo got destroyed, and a lot of snakes were released. The confirmed number for that kind of goes back and forth. But that is kind of known as the big introduction. And then since then, it's typically escapees. It's people who don't want pets anymore. And now there's a lot of regulation and a lot of that there's a lot of ways to kind of fight FWC as a good program for Pet Amnesty. So if people didn't want their pet anymore, if they were to give it up to FWC, they don't have to pay the consequences, if you will. So there's a lot in place now but you know, that was down in Miami Dade is where that big release happened. So you're just, you know, truthfully after the giant urban sprawl, that is the Miami area, it's just, you know, little agricultural fields, canal systems, etc, etc, that all leads into the Everglades, so it was pretty easy for them to move that way.

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Phillip Stokes 10:00

What is the range currently in Florida,

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Paul Evans 10:03

the range of we're gonna go kind of the confirmed population is just about, like, the most southern bit is just around Key Largo or North Key Largo, kind of Crocodile Lake area, a little bit in Key Largo, but there have not been confirmed expansion or distribution further down, the most northern range is just around Loxahatchee on this side is right around there. And then as you kind of move across the state, you're going to kind of go over towards Naples. And then most recently around Cape Coral is where we've started to have more. Now the jump between that side on the West Coast could be human facilitated, it could be that there's just some distribution lines between there we haven't been able to confirm yet. And we have of course is relative to the whole giant teams of organizations that are researching pythons, not just us, but yeah, you know, all through Big Cypress, through Everglades, up through several different water conservation areas, through neighborhoods, etc, etc. They're pretty hearty animal, like, you could find them like, you know, they find they find them sometimes in winter, and people's car engines, so they don't necessarily have to only be in the swamps, there are other places that they would be able to be alright with,

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Phillip Stokes 11:34

like, like an urban environment, like a, like a suburban neighborhood kind of thing.

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Paul Evans 11:38

Yeah, I'm sure they're not gonna love a skyscraper, but you know, suburban neighborhoods, etc, etc. You know, people don't like to think of it as cats and dogs and like, you know, rats and whatever that come from human development as a food source, but they 100% are and can be a food source for these animals.

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Phillip Stokes 12:02

So let's talk a little bit about just the kind of natural history that just the fact sheet type of information for a Burmese Python. So what do they look like? How big do they get? We know they're snakes? What do they eat? We you talked about? Like some small mammals and things like that, but what else do they eat? So what are just some of those kind of broad facts about them?

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Paul Evans 12:25

Yeah, so we'll start with size, because that's that's tends to be what people notice most about them. So outside of being a hatchling hatchlings probably are going to be about maybe 16 inches to just about two ish feet, when they first come out, where adults kind of start sub adults and adults, you'll probably get around six feet is when we kind of get to more of that sub adult stage. And then around 12, or 13 feet is when they've kind of become adults. Now from there, specifically, the females tend to put on a lot more mass a lot more weight. And they are the animals that often reach the 17-18 footers that you'll see in the news. In captivity, I believe a couple zoos have gotten them close to 20 feet. Honestly, I would not be surprised if a 20 footer exists somewhere out in the Everglades. So with those, as they get bigger, oftentimes, especially that clutch size, or that egg size is going to get bigger. So they're going to be producing more eggs, I think the largest female found was like 215 pounds and almost 100 eggs or something in her, so massive in terms of looks, they're going to have that very typical pronounced constrictor head. So it kind of has, it gets very thin after what are essentially behind the jaw. And that's going to be so they are able to detach and open their mouth very wide after they've constrict animals. After that the rest of the main thing you're really going to notice is their dorsal pattern. So their dorsal pattern, typically is going to still be in that brownish black, almost all of green stage with a lighter tan back background, if you will. And it's going to kind of look like a giraffe or it's going to look like a puzzle piece. If you could move all those dorsal pieces together, they would kind of look like they line up from that. That's actually one of the reasons why they're so good at hiding is that type of patterning really does well as an ambush predator when they just sit there because you know, I essentially just described the color of shadows and you know, dry vegetation. So they'll just sit in that in there. They're very good, I think Think roughly less than 5% is your actual chance of like, identifying them and detecting them if you were just out and about walking through. So that's really low. And that's why there's several methods for actually trying to increase your odds of finding them. But in terms of Natural History, for more physical stuff, that's probably just about it that like, most people need to be aware of, as you know, size, what they look like, where they'll be just about anywhere down here. As long as they have an ability to find, hopefully, small mammals. If not ground nesting, or water. shorebirds all that will do great. I think, to date, it's like 41 different types of birds have been found inside them. In terms of mammals, I think every mammal has been found inside the sides. And we're talking about the peninsula, Florida throughout the keys, you know, key deers and stuff like that. That hasn't been determined yet. They haven't quite made it that far south, but probably I think just Florida Panthers and the black bear are the only mammals that have never been confirmed or were highly suspected. Through Diet Analysis, but Yeah, Bob Cats, various types of hares. Squirrels, you know, I think they pulled a husky out of a Python at one point. I'm sure people have seen in the news, alligators. That's a very well known and discovered repeatedly. I think the largest one I've seen is a six and a half foot Gator pulled out. That was almost a 17 foot individual. But yeah, I mean, you that's definitely known resource, but it does tend to go both ways. There are some large alligators

who have been observed eating pythons, but it is just one of those things where, you know, a sub adult, six, five foot Gator, it's not going to be able to do too too much to a very large individual of Python.

**P** Phillip Stokes 17:16

Yeah, that is. That is one of the things it's like, when we think of Florida, like alligators are one of the top predators, at least and especially with reptiles, but like, yeah, it's like there's there's a new a new king in town almost, you know,

**P** Paul Evans 17:33

completely. That's why it kind of they took off so well because you didn't have a lot of the natural ecological factors to kind of keep them in check for so long. But it is one of those things where it kind of was the perfect time because South Florida this ecosystem evolved, you know, for a million or so years to be too large crocodilians, small predatory. I say small, but, you know, five to six feet, predatory venomous snakes, and a wide range of different predatory and herbivorous birds, and then Hardy swamp mammals. So you know, the black bear and Florida, Panther, bobcat, all these things. And then, you know, over time, some of those populations, whether it's due to humans, whether it's due to other changes in the habitat slowly started to dwindle, and several those have bounced back, but several of those still have dwindled, to the point where, when an apex predator comes in, which kind of is what the Burmese python is, in their in their home range, there are things that eat them, you know, they there are a lot of pressures actually, from being over hunted, they are listed as vulnerable. And so it is kind of one of those things where, you know, we don't have King cobras, we don't have, you know, tigers, all these other large animals that could have a big impact on large Burmese pythons, we have people in the occasional, you know, maybe Bobcat there, or alligator that's going to take them out. For the most part, it's really going to be humans and whether it's on purpose through the Florida Python contractor system, or on accident, and it's people driving on the road and just, you know,

**P** Phillip Stokes 19:39

so you mentioned that they're thriving because the conditions are right, there aren't a lot of those same pressures that they would have in their native range. And you mentioned that how efficient of hunters they are. So what is that doing? What is the shakeup kind of down in, in South Florida and what are the implications,

**P** Paul Evans 20:01

oh, they're never good. They're never good implications. You know, they're an ambush predator. And in their home range, there are seasonal variations. So whether it's animals moving through whether it is a more severe wet and dry season that occurs, where they will actually fast where they'll sit and not eat, they don't have that here. So that's kind of the other problem is this is a buffet for them. They're an ambush predator. So they're kind of just gonna want to curl up and sit and wait for them to kind of sense that a mammal or a, you know, like a

heron, a woodstork or something like that is nearby. And then that's when they're going to strike. And a lot of this has led to severe plummets of native mammals. You know, some of those are endangered species, some of them especially in Key Largo, are endemic. So endemic means they only live there. So the Key Largo woodrat is one of those that already endangered, they don't have more habitat, they just have, you know, those parts of the archipelago. And, you know, they're being eaten all the time by Burmese pythons, you're having, you know, somewhere between 80 and 90% of some of these male populations crash in areas where Burmese Pythons are moving through, that's one of the reasons why we actually will do surveys and look for where we're seeing certain types of mammals. Because specifically some Marsh hare species, if you're able to still find several of them, it likely means you don't have a healthy population of Burmese Pythons. Yeah. So down in like Everglades, we rarely see bunnies. But as you move up towards parts of Loxahatchee, and further north, you're finding a lot more of that variety, that natural biodiversity so, so that's kind of where you started to have problems. There's a lot of that biodiversity, that's loss, because Burmese pythons are, you know, like I said, they kind of have a buffet, they're able to eat when they want to eat. And that's part of the reason also they've kind of grown so exponentially, not just in population, but in size. You know, they're not pulling 19 footers in Laos and Thailand all the time. Sure, it happens, it does happen. But not necessarily to the the freak numbers that we get here. And it's just because, you know, it's it's a Golden Corral for them almost.

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Phillip Stokes 22:36

Yeah, it's you said, like, their native range, they have times of like, feast and famine. And reptiles are for it's my understanding that they just, they just keep growing and growing and growing, right. I mean, if I'm understanding that correctly, they

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Paul Evans 22:54

Yeah, from an allometric standpoint, or like a growth standpoint, they mathematically will, will grow pretty, pretty close to exponentially. Obviously, it slows to a certain point, like the males aren't necessarily going to get that big, but you know, the males can still get up into 14-15, yada, yada, yada, but it just kind of depends where they're putting their energy too. But they definitely, you know, if left unchecked, they probably could easily get more into the 20s. And potentially, you know, start to, you know, the, the Florida Burmese python, if you will, could end up being the longest snake ever, if they were some of that the science for like actual growth with reptiles as a whole, it really still depends, you know, turtles, crocodiles, a lot of those, it is kind of expected, they would never slow, it would just will, they'd never stop, it would just be a very slow growth over time. So a lot of that is likely and modeled to be so but obviously, a lot of it's going to kind of depend on like, those individuals, those kind of variables that they have, but here in Florida, there, they definitely have more of a chance to really push those growth limits.

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Phillip Stokes 24:16

I mean, that is pretty fascinating. I mean, you can't like you can't always predict these things. And there are like all of these consequences, of course, I mean, you know, we talked about some of the larger species. You talked about hare, I'm sure raccoons are hurting and different

animals like that, but like, what are some of the other like, secondary consequences are, you know, is it changing landscapes? Is it like altering the production of certain plants because you're not having seed, you know, deposits of different you know, from mammals. I'm just like, throwing that out there. You know, like

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Paul Evans 24:56

That is a fascinating thought on if seed dispersal was being jeopardized in some way because you are right that you know you are losing probably love your primary seed dispersal. I don't know for sure about that. But that was a fascinating thing to look into. But in terms of like secondary side effects, there's kind of two main ones, one of them is the economics. So they are going to, you know, like, there's millions at this, that are going towards this. We are no longer you know, just that containment. If anyone's familiar with the invasion curve, there different phases, we are in long term management. So although yes, you know, there is a containment plan and keeping them in the southernmost part of Florida for as much as we can, they're also going to be kind of a struggle, if you will, to really look at just where else they're going to go. A lot of these financial problems that pop up is because you know, we have the contracting system. So you have people who are getting paid by the hour, they're getting paid, you know, I think by the foot after six feet, or something like that, which is great, you know, they've removed somewhere, I think the number is roughly 9000 something now. So it's a lot that they've been able to remove. So that program started, I believe 2015 or 2016, something in there. But that all costs money, you know, that all costs energy. And the problem with this whole equation is there's no end, there's no we do this, and it's done. We do this, and we hope it's better, we do this, and we hope we learn more. And then the second kind of negative side effect is unfortunately ecological one that impacts a lot of our native snakes. So they brought a South East Asian pentastome, which is kind of a type of parasite. And it has been found in several Native snakes, some garter snakes, some cottonmouth, water snakes, etc, it's it's found in them, you know, it's not great, and it's going to definitely hinder the life of those animals and possibly even kill them. And then the the other problem with that is that some of those species don't just live in Florida, some of those types of native snake, I think the furthest north, the parasite has been found is around I think just north of Gainesville. But you know, but from there, you're just opening the can of worms for where the rest of those, you know, rest of those parasites can go are talking about a parasite that could potentially, you know, get into every lower 48 state.

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Phillip Stokes 27:53

That's, I mean, you see the big animal, but of course, you can't see the parasite, you know, with your eyes. Oh, yeah. And it's, I mean, it's like what happens a lot with our agricultural crops and things like that, you know, like, you get one little, you know, small insect or something that's, that's carrying a secondary, like parasite or pest or something, and it it can just take off and spread and, and we everything is just interconnected, right? Everything just kind of works together. That's, that is right, the ecosystem. And one, one shake, you know, one, one big shake up, I should say here can just throw everything off, right?

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Paul Evans 28:34

No, completely. And that's kind of you know, the other. I know, we're mostly focusing on



pythons today, but that's the added variable of Nile monitors, Asian water monitors, Argentine black and white Taegu, black spiny tail iguana, Guana, green, iguana, Peters rock Agama, like all these other herpaphona, cane toad are here and are part of a problem as well. So that's kind of where you're starting to deal with even more impacts is that, you know, pythons are kind of the first big impacts. And then, on top of that, you have now you know, five to six other species of invasive reptile that are having negative impacts that you also have to monitor on top of, you know, Burmese Pythons.

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Phillip Stokes 29:27

Yeah, so one thing I do want to ask a little bit about some of the research that's being done, you know, with with Croc dogs and just otherwise FWC or any other agencies or centers, but I know one of the things is there's monitoring or tracking, I should say, right with those little radio chips, and telemetry. Thank you. And one thing I heard years ago is you could basically be right on top of the snake and you still don't know where it is.

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Paul Evans 30:00

Oh, I can firsthand tell you that was true. Because when we started tracking AI, we it's called, like a walk in, because you're trying to walk up on it, you want to like, see where it is see how close we can actually get to it. A lot of this is because you're trying to find breeding aggregations, especially this time of year, which those who don't know, they kind of breed in this sex ball, if you will, where there's one female, typically one or at one, one to a few males. So the whole point of that is, you know, if you track the female, you're able to go in and remove males. But ya know, I've been a foot away from, I think, 13 footer, and no, could not could not see just sitting there little shallow water vegetation. But ya know, with the scout St. Projects, there are a few. We do ours throughout part of various water conservation and wildlife management areas over here in South Florida. Crocodile Lake, they have a great scouting program where they also use dogs, as almost a drug dog to track them as well, which has had really good success too, as it's just another form of, you know, if you teach a dog to smell and find it that way, you know, they're not going to be tricked by their eyes. They're going, you know, we're humans. So humans, sometimes we trick ourselves. We're like, yes, that's a snake and it's not. And then sometimes we're like, no, it couldn't be and it is so that's definitely an another interesting element. And then USGS and partnership with I believe Dr. Remo says, lab. They have done telemetry. I think they do telemetry with adults, but they also do it with hatchlings, which has led to several interesting discoveries of some of the animals that predate on hatchling, Burmese pythons. So, you know, several large raptors, you're getting into cotton mouths, bobcats, etc, a lot of a lot of very interesting things that we are starting to see native species kind of combat some of these invasive species as well now.

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Phillip Stokes 32:14

I want to I want to get into like, like management, before we kind of close up and a little bit about prevention as well. But were there any other research projects or things that you wanted to highlight? Before we kind of moved on?

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Paul Evans 32:28

I mean, I think Diet Analysis is a very interesting aspect, as well, as we here at "Croc Docs", we work in partnership with a lot of the Python contractors or organizations, so South Water Management and FWC to try to look at the efficiency of, you know, removing pythons as a management plan as a kind of career, if you will, like, how effective is that in terms of what we know from the future, and what we know from the past of detection rates, and versus the time, the effort, the money, etc, etc, to kind of look at what we're able to gauge from this program, as well as trying to back into like Diet Analysis and body condition and things like that, really start to look at, you know, are we starting to see less healthy individuals be brought in? Are we reaching some level of containment from a, you know, a viable resource level? So winter is the carrying capacity for some of these Burmese Pythons and certain habitats, when are they hitting it? If what is possibly changing from a diet standpoint, because you know, people have opened up 16 foot animals and still found, you know, little, little six inch rodents. So it doesn't necessarily stop, just because they're getting bigger, just because they can eat an alligator doesn't mean they always want to, they still have to sit there and digest it and it takes time. So there are a lot of things that are very interesting, from a behavioral standpoint that I'm sure in the next 10 years, there's going to be a lot more confirmations. But right now, there are still you know, a lot of mysteries, especially with distribution. That's why Telemetry is such an important thing is trying to figure out where they're moving to. But a secondary way if people you know, kind of moving into prevention if people kind of want to help there is a great app called I've got one similar to iNaturalist but it's specifically been made mostly for invasive species throughout parts of Florida, and people can just put in their information for what they saw. Where are they saw it and it all gets confirmed verified by biologists. So that's been very helpful. There's been a lot of not first but we'll say like second or third kind of sightings in certain areas, we had questions about that come through that resource. And that's very helpful because, you know, we can't be everywhere. There's probably a solid 100 to 200 individuals who work in the constant management and research of whatnot, on different levels, whether it's grad student all the way up to, you know, professors and research. But a lot of that, you know, we all live in certain areas, if Python start to pop up, some are further along, you know, the East Coast in Florida, like Daytona or something like that. A lot of us aren't, aren't up there, because we're so used to working down here. So it is very helpful in other parts of the state just to start to see, you know, if they do continue to distribute up north, you know, how else can we get that information if it's not from people who live there?

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Phillip Stokes 35:51

Yeah, that's a great thing to mention the the I've got one app. And, yeah, that's really cool that it's almost like a citizen science, but also like, a way to report things as well, so

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Paul Evans 36:06

And I should say, it's not just for pythons, if you are a gardener, if you're a fisherman, you're not, you're not necessarily going to be helping the research I do on the daily, but you will be helping someone in the management research they do daily.

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Phillip Stokes 36:18

For sure. I do want to maybe and or start to wrap up with the idea of prevention, you know, this overall topic of prevention, you know, what have we learned about the spread of invasive reptiles and non native species that we can really take for it to learn? I don't want to sound like, pessimistic, but it's like, are we just like, Are humans just so curious? And so, you know, we're motivated by different things. So like, there's always going to be kind of that, that bad apple? I don't know, you know, what can we learn about this to help with prevention in the future?

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Paul Evans 37:05

I mean, I don't think you're too far off by you know, calling humanity a apple in the sense because it is literally, Jurassic Park, you know, if anyone has watched all six films of Jurassic Park and Jurassic World, it is humans falling to their intrusive thoughts or morbid curiosity continuously. And a lot of that is kind of where some of this invasion ecology problems started, where you have, wow, I would love to have a crocodile as a pet. So people got, you know, in the 80s, and 90s, they got a Spectacle Cayman, which, when you get it, it's, you know, they're tiny, when they're little, they're very cute, but like, they're not huge, maybe probably a foot or something when they're like, they're really, really tiny, but still not huge. You know, you can keep in your bathtub and have a great time. But then these animals, they start very small, and they grow and they grow and they get very, very large, what happens is people don't always understand, you know, when you think a six foot long snake, you're like, okay, but it's gonna curl up, it's not always going to be that big, and that's true, but they still need a certain amount of habitat space. So then as that animal moves towards 10-12 feet, you now have an animal that you know, is going to require even more space, more food is, you know, probably becoming harder and harder to actually hold all the time. So as they get bigger, and you start working with it less in terms of like, you know, bringing it out, etc, etc, it's gonna be less habituated and become more kind of conditioned, possibly not necessarily to be violent, but it's not gonna be as used to being handled. So that can lead to some aggression that can lead to it not being as welcomed to humans. And then you have an animal that you've now have labeled as possibly mean, it's big, may be scary to some people, you're you're living off and then, you know, for a while people are just like, well, I don't want to kill it, it's an animal I've had as a pet, I love it. And they just let it go. And unfortunately, that still exists. Today, you know, this is not something that just happened in like the 90s or the 80s or the 2000s. You know, it happened five years ago, it probably happened somewhere unfortunately for some other species, you know, today like that, that is why there is a lot more regulation now. So, there are prohibited species. So, most commonly known, large constrictors and several venomous species are on these lists. There are class three permits so only certain people can keep some of these animals. Whether it is I believe they were grandfathered in When they had something prior or now they are a class three permit holder. And a lot of it comes down to like what they have, what kind of inspections through FWC and the other governing bodies. I don't believe a lot of these animals. You can, like I don't, if someone shares on a Burmese python, like you're not, no one's getting that back as a pet through this process, but they will at least not in the state of Florida. But they will through FWC is amnesty program, I believe they partner with Southwest and some of these animals do leave the state. So they will go to education centers, to zoos to other private organizations throughout the United States. So in that sense, there is some good, there are some other paths, you know, if you're, if you're listening to this, and you don't want you know, your giant reptile anymore, there are ways to get rid of it in a way that you're not hurting the animal you've raised, as well as you're not hurting the animals that live here in Florida. But a lot of it I think just comes from education, and further prevention of asking these questions, trying to learn more about why it's a problem. And then maybe from a more psychological standpoint, asking ourselves or asking, you know, people why they so badly want

some of these exotic, you know, animals, this wildlife to be a pet to be something, you know, that it's not a lot of our pet species have been domesticated over hundreds of 1000s of years. It's not something that just happens in a day, some of these species, you know, like I said, with ball pythons and Burmese pythons, they're pretty hearty. So that's one of the reasons why like they did make a quote unquote, good pet in terms of like, they eat typically pretty well. They're not naturally too, too aggressive. So there are a lot of things that doesn't, just because something is possibly a more calm or chill animal, it doesn't really mean that it's domesticated.

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Phillip Stokes 41:56

No, and I think that is a good message to put out there. We can include a link to like the amnesty program that you mentioned, like in the show notes. So if you're looking at, you know, potentially, you know, figuring out what to do with with some pets, or if you know, someone, or if you're listening, you're like, hey, you know, this is this is a opportunity to then educate my my cousin, my friend, my neighbor, you know about some of these things. So all like really good points that you just said, Are there any last things you want to close with today, before we end the episode,

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Paul Evans 42:31

I think just one more thing about that stuff is also if you if you have it, and you don't want to get rid of it, but maybe you want to get better at being a pet owner. There are people you can reach out to there's a lot of very good, responsible pet owners for different types of herbs, Ivana, and resources that are out there. So sometimes maybe it's a hard situation with your pet because you know, maybe don't know everything, you don't have all the education that maybe you need to be better at it. So there's also you know, there's also that path, I think also is a good thing as long as it's, you know, legally owns and all the other things that exists.

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Phillip Stokes 43:08

Well, Paul, thank you so much for being a guest on Science by the Slice. So much fun talking with you and learning all about pythons and of course just all the other reptiles that you study down there in the Fort Lauderdale area.

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Paul Evans 43:20

Yeah, thank you so much. This was great.

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Ricky Telg 43:25

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